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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			EXAMINER HAILEMARIAM, EMMANUEL	
			ART UNIT 2629	PAPER NUMBER
			MAIL DATE 10/30/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/540,925

Applicant(s)

LEE ET AL.

Examiner

Emmanuel Hailemariam

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/29/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

Claim Objections

1. Claim 10 is objected to because of the following informalities:

The word "the predetermined" on claim 10 lines 21 should be "a predetermined".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 3,4 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 4 recites the limitation "the application" in lines 1 and 3. There is insufficient antecedent basis for this limitation in the claim.

5. In claim 3, line 2, "input sensor information" is not clear. What does sensor information means?

The phrase "number of edges" on claim 10 lines 22 and claim 21, line 8 is not clear.

What / which edges the applicant is referring to?

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7,10-15 and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xiong et al (US 2003/0214481).

AS to claim 1,10,15, and 21, Xiong discloses a method of recognizing whether a user is wearing a three-dimensional (3D) (fig.1 (28), the input system requires the hand to move in three-dimensional space) input device (fig.2 (21)), [0016], [0017] which includes a finger device with a plurality of sensors ((fig.2A (27)), [0023], [0030] attached thereto that sense finger movement [0015] and input information based on finger movement signals sensed by the sensors [0009], the method comprises: acquiring sensor signals[0007]; [0008], which are used to sense movement of the finger device [0004] [0010]; determining, from the acquired sensor signals (fig.2A, (211), [0038] and recognizing whether the user is wearing the 3D input device based on the results of step and a port change recognizing unit and sensor signals (fig.2A), [0038]; and a finger device recognizing unit which recognizes whether the user is wearing the finger device [0004] [0010]; and a signal-processing unit (fig.1(19) and a pre-processing unit [0023];[0030] ((fig.1)(CPU) (19)). Xiong does not expressly disclose port change recognize that Xiong analyzer when detecting the fingertips strike the surface. However, it would have been obvious for Xiong device to detect the number of edges of the surface striked by the fingertip, during typing the traditional keyboard [0020].

AS to claim 2, Xiong discloses the method of claim 1, wherein adaptively configuring the 3D input device comprises: adaptively configuring a signal-processing unit, which processes movement signals sensed by the finger device [0004] [0010],

based on the recognition results (**fig.3A (408)**); and adaptively configuring a device driver of the 3D input device based on the recognition results (**fig.3A (410)**) and basic set-up information used for information input **[0042]**.

AS to claim 3, Xiong discloses the method of claim 2, wherein the basic set-up information includes input scenario information related to arrangement of information items that are selected by finger movement and a language used for information input **[0034]; [0042]**.

AS to claim 4, Xiong discloses the method of claim 2, wherein the application configures a soft keyboard based on the recognition results (**see abstract**) and the basic set-up information when the application receives the recognition results (**fig.3A (410)**) **[0042]**.

AS to claim 5, Xiong discloses the method of claim 4, wherein the application outputs (**fig. 1 (18)**) the configured soft keyboard (**fig.1 (16)**) to an output device (**fig.1 (15)**).

AS to claim 6, Xiong discloses the method of claim 5, wherein the soft keyboard displays (**fig.1 (16)**), finger positions of the finger device on an array of information items that are selected by finger movements **[0015]**.

AS to claims 7 and 19, Xiong discloses a method of configuring a three-dimensional (3D) information input device (**fig.1 (28)**, *the input system requires the hand to move in three-dimensional space*) which performs information input operations using a finger device that is worn by a user **[0004] [0010]** and senses the user's finger movement **[0015]**, the method comprising steps of: recognizing whether the user is

Art Unit: 2629

wearing the finger device and recognizing finger positions of the finger device (**fig.2A**), **[0038]**; and adaptively configuring the 3D input device based on the recognition results **[0004] [0010]**.

AS to claim 11, Xiong discloses the method of claim 10, wherein step (a) further comprises: storing (**fig.1 (20)**) information about sensors experiencing changes between current sensor signal values and previous sensor signal values (*timer values at the time when the changes occur*) (**fig.2A (27), (211)**).

AS to claim 12 and 13, Xiong discloses the method of claim 12, wherein step (c) further comprises: if at least the predetermined number of timer values are detected (**fig.2A (27), (211)**), recognizing that the user is wearing the finger device with corresponding sensors outputting the acquired sensor signals attached thereto (**fig.2A [0038]**); and unless at least the predetermined number of timer values are detected, recognizing that the user is not wearing the finger device with corresponding sensors outputting the acquired sensor signal **[0044]**.

AS to claim 14, Xiong discloses the method of claim 13, wherein the method further comprises: if it is recognized that the user is not wearing the finger device (**fig.2A**), **[0038]** outputting information indicating an error value, (*error occurs when appropriate input code has not been entered*); and if it is recognized that the user is wearing the finger device **[0004] [0010]**, (*the duty ratio calculated for the threshold based on the timer value, marking fixed with pulse*), calculating duty ratios by using the timer values scaling the calculated duty ratios by a predetermined value and outputting the scaled values **[0051]**.

AS to claim 22, Xiong discloses the apparatus of claim 21, wherein the signal acquiring unit comprises: a port status storing unit (**fig.1 (20)**), which stores information about sensors with changes between current sensor signal values and previous sensor signal values (**fig.2A (27), (211)**); and an event time storing unit which stores timer values set at the time of changes between the current sensor signal values and the previous sensor signal values **[0047]**.

AS to claim 23, Xiong discloses the apparatus of claim 22, wherein determining whether at least the predetermined number of timer values, stored in the event time storing unit, are detected (**fig.2A (27), (211)**).

AS to claim 24, Xiong discloses the apparatus of claim 23, wherein the finger device recognizing unit recognizes that the user is wearing the finger device if at least the predetermined number of timer values are detected or recognizes that the user is not wearing the finger device if at least the predetermined number of timer values or less are detected **[0044]**.

7. **Claims 8,9,16-18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xiong et al. (2003/0214481) in view of Frid (6075517)**

AS to claim 8, Xiong discloses the method of claim 7, does not disclose the reset information.

However, Frid discloses the reset information (**fig.6 (134)) (col. 4 lines 62-65)** wherein the reset information includes information about permission or cancel of use on a specific finger of the finger device (when the device has its electrical power removed no longer operates. When the power is restored a reset takes place (**col. 16 lines**

21-27), information about selection of an input scenario related to arrangement of information items that are selected by finger movement (**col.1 lines 39-43, col. 1 lines 54-65**), and information about selection of the language used for information input (**col. 19 lines 34-45**).

Therefore, it would have been obvious to one skill in the art to use Frid's reset information into Xiong's input device, because this will provide the input device to reset to the initial value (**col.5, lines 65 to col. 6 lines 3**).

AS to claim 9, Frid discloses the method of claim 7, wherein the user interface uses a control board of a Window system (**fig.4 (60) and (58)**).

AS to claim 16, Xiong discloses the 3D input device, a signal processing unit and pre-processing unit above, but does not discloses a device driver.

However, Frid discloses a device driver (**fig.4, (56)**), which is adaptively Configured to process the movement signals based on the reset information received from the application (**col. 3 lines 56-65**).

Therefore, it would have been obvious to one skill in the art to use Frid's device system in to Xiong's input device, because this will provide the input device to generate data packets of different sizes (**see Frid, col.3, lines 20-27**)

AS to claim 17, Xiong discloses the 3D input device of claim 16, wherein the basic set-up information includes a language used for information input **[0042]** and input scenario information related to arrangement of information items that are selected by the finger movement **[0009]**

AS to claim 18, Xiong discloses the 3D information input device of claim 17 further comprising an application, which configures a soft keyboard that displays the finger positions of the finger device on the arrangement of the information items that are selected by finger movement (**see abstract**) based on the recognition result and the basic set-up_information received from the device driver (*setup information is the setup of threshold before normal operation*) (**fig.3A (410)**) [0042].

AS to claim 20, Frid discloses the apparatus of claim 19, wherein the reset information (**fig.6 (134)**) (**col. 4 lines 62-65**) includes information about permission or cancel of use on a specific finger of the finger device (**col. 5 lines 42-60**) information about selection of an input scenario related to arrangement of information items that are selected by finger movement, and information about selection of the language used for information input (**col.1 lines 39-43, col. 1 lines 54-65**).

Correspondence

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Hailemariam whose telephone number is 571-270-1545. The examiner can normally be reached on M-F 8:00am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on **571-272-7674**. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2629

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Emmanuel Hailemariam

09/09/07


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